

## Claims

1. A combustion chamber (5), in particular of a gas turbine,  
having an outer wall structure (10) that surrounds an internal  
5 area (8), and an inner wall offset from the wall structure  
(10),  
wherein the inner wall is formed by the surface of a housing  
(15) arranged in the internal area and can be cooled  
essentially by convection by an air stream (L) flowing between  
10 the outer wall structure (10) and the inner wall, the air  
stream being conducted in a closed cooling air channel (20).
2. The combustion chamber as claimed in claim 1,  
wherein the housing (15) is made of sheet metal, in particular  
15 having a wall thickness between 3 mm and 10 mm.
3. The combustion chamber as claimed in one of the claims 1 or  
2,  
wherein the housing (15) extends from a burner (25) projecting  
20 into the internal area (8) to a hot gas outlet orifice (28) in  
the combustion chamber (5).
4. The combustion chamber as claimed in claim 3,  
wherein the housing (15) is interlocked with the wall  
25 structure (10) in the area of the hot gas outlet orifice (28).
5. The combustion chamber as claimed in one of the claims 3 or  
4,  
wherein the wall structure (10) has at least one cooling-air  
30 inlet orifice (40) in the area of the hot gas outlet orifice  
(28).
6. The combustion chamber as claimed in one of the claims 1 to  
5,  
35 wherein the housing (15) has stiffening ribs (50) on its  
surface.

7. The combustion chamber as claimed in one of the claims 3 to 6,  
wherein in the area of the burner (25) the housing (15) has a  
5 device (42) for insertion of the burner (25).

8. The combustion chamber as claimed in one of the claims 1 to 7,  
wherein the housing (15) is suspended on the wall structure  
10 (10) by means of a suspension device.

9. The combustion chamber as claimed in claim 8,  
wherein the suspension device is formed by a plurality of  
fixing elements (60) that are arranged around the perimeter of  
15 the housing (15) and connected to the wall structure (10)  
under tension.

10. The combustion chamber as claimed in claim 9,  
wherein the fixing elements (60) are spring mounted at the end  
20 adjoining the wall structure (10).

11. The combustion chamber as claimed in one of the claims 8  
to 10,  
wherein the suspension device is designed such that the  
25 suspended housing (15) can move both axially (A) and radially  
(R) with respect to an axis running in a lengthwise direction  
of the combustion chamber.

12. The combustion chamber as claimed in one of the claims 9  
30 to 11,  
wherein the fixing elements (60) comprise bolts (62), each of  
which have at a first end an essentially hemispherical bolt  
head (64) that is seated so as to allow tilting in a recess  
(66) in a bolt holder (68) mounted on the housing end, said  
35 recess being essentially hemispherical in cross-sectional  
view.

13. The combustion chamber as claimed in claim 12,  
wherein the second end of each bolt (62) is fed through a  
guide hole (70) in the wall structure (10) and through a  
compression spring (72) on the outer side of the wall  
5 structure (10), the compression spring (72) being compressed  
against the outer side of the wall structure (10) by means of  
a washer (74) held at the second end of the bolt.
14. The combustion chamber as claimed in claim 13,  
10 wherein the guide hole (70), viewed in cross-section, has a  
narrowing (76) by means of which radial (R) and/or axial (A)  
movement of the housing (15) can be damped.
15. The combustion chamber as claimed in one of the claims 1  
15 to 14,  
wherein the housing (15) is connected to at least one inner  
housing (90) of an individual combustion chamber (93) in such  
a way that during operation of the combustion chamber the  
thermal expansion component (100) of the inner housing (90) in  
20 the radial direction (R') is essentially equal to the thermal  
expansion component (105) of the housing (15) in the radial  
direction (R').
16. The combustion chamber as claimed in one of the claims 1  
25 to 15,  
wherein the housing (150) is supported in the area of a hot  
gas outlet orifice (155) and in the area of a burner  
installation receptacle (160).
- 30 17. The combustion chamber as claimed in claim 16,  
wherein the burner installation receptacle (160) is designed  
as an inner housing of an individual combustion chamber (190)  
or as a burner receptacle, in particular as a burner slide-in  
receptacle.

18. The combustion chamber as claimed in one of the claims 1 to 17,  
wherein the surface of the housing (150) is curved.
- 5 19. The combustion chamber as claimed in one of the claims 1 to 18,  
wherein the housing (15) is split in a maximum of one sectional plane.
- 10 20. The combustion chamber as claimed in one of the claims 1 to 18,  
wherein the housing consists of a number of housing sections (200), in particular of a number of groups of housing sections (200) each comprising four housing sections (200), the housing  
15 sections (200) having longitudinal ribs (210) extending essentially over their entire length, which, when viewing the exposed edge of each longitudinal rib from above, run practically in a straight line.
- 20 21. The combustion chamber as claimed in claim 20,  
wherein the longitudinal ribs (210) are each inserted in corresponding negatively shaped longitudinal slots in the wall structure (270).
- 25 22. The combustion chamber as claimed in claim 20 or 21,  
wherein the housing sections (210) have circumferential ribs (220), which, when viewing the exposed edge of each circumferential rib (220) from above, run in a curved path.

23. The combustion chamber as claimed in claim 22, wherein the circumferential ribs (220) are each inserted in corresponding negatively shaped circumferential slots in the wall structure (270).

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24. The combustion chamber as claimed in claim 22 or 23, wherein the housing sections (200) can be dismantled and removed from the end for a burner installation receptacle (250).